

REACTION TO PREDATORS IN THE ROSE-BREASTED GROSBEAK

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THE observations reported here were incidental to a comprehensive study of the behavior of the Rose-breasted Grosbeak (*Pheucticus ludovicianus*). The field observations were made primarily in a tract of wet woodland at the head of Cayuga Lake, Ithaca, Tompkins County, New York. A small tape recorder was used for taking notes in the field. Almost all observations were made without the use of a blind. Captive birds were also studied.

PREDATORS

Ivor (1944a, 1944b) reports male Rose-breasted Grosbeaks being taken by Sharp-shinned (*Accipiter striatus*) and Cooper's (*Accipiter cooperii*) hawks. Red squirrels (*Tamiasciurus hudsonicus*) take young (Baird, 1964), as may Common Grackles (*Quiscalus quiscula*), gray squirrels (*Sciurus carolinensis*), and Blue Jays (*Cyanocitta cristata*). Predation was not witnessed in this study, but eggs and young were found to be missing from a number of nests. Some of this predation is known to have been by man; red and gray squirrels, grackles, and Blue Jays were also common in the study area.

The closely related (if not conspecific) Black-headed Grosbeak (*Pheucticus melanocephalus*) is known to have its eggs taken by gopher snakes (*Pituophis catenifer*) (Pemberton and Carriger, 1916), and gray (*Sciurus griseus*) and fox squirrels (*Sciurus niger*) (Boyer, 1941) take young.

AVOIDANCE AND MOBBING

Gray squirrels passing close by foraging grosbeaks are avoided by a slight movement aside. Two fighting Blue Jays near a grosbeak territory were mobbed with *Chink* (a sharp call; see Dunham, 1965, for an audiospectrogram). Grackles in the trees above a grosbeak nest were mobbed with loud *Chink*, and two grackles in a tree above another nest were mobbed with *Squawk* (a harsh, grating call; see Dunham, 1965, for an audiospectrogram) and quickly left. Watts (1935:41-42) reports aggression toward grackles. Both sexes mob grackles, and were seen to join White-breasted Nuthatches (*Sitta carolinensis*), American Redstarts (*Setophaga ruticilla*), Black-capped Chickadees (*Parus atricapillus*), and Baltimore Orioles (*Icterus galbula*) in doing so.

P. melanocephalus will sometimes mob a mounted Screech Owl (*Otus asio*) (Altmann, 1956).



A



B



C



D

FIG. 1. *Wings-waved* in a captive female Rose-breasted Grosbeak. A, B, and C are low, medium, and high intensities of the display, respectively, followed by attack in D. Arrows indicate features discussed in the text. Drawn from photographs.

A female grosbeak model (of papier-mâché) placed one meter from a Rose-breasted Grosbeak nest was mobbed by the female with Chink (and tail-flicking). This was a reaction to a novel object and not one to a bird of the same species.

Man is usually avoided by moving away, especially if the bird is on the ground or in a shrub, but less often if it is in a tree. Near the nest or building site individual variation in reaction is striking. Extreme examples are a female that always bit a mirror held at her nest and had to be repeatedly shoved aside to inspect the young, and a female that always slipped off the nest when approached within 100 meters although the nest and nest shrub were well concealed. Most individuals hesitate to approach the nest if a man

is near, and mob him with Chink from perches near the nest (see also Allen, 1916).

Ambivalent turning of the body toward and away from the nest (with feet stationary), and displacement preening and head scratching, are common in such mobbing, and suggest a strong conflict between approaching the nest and avoiding the intruder.

WINGS-WAVED

Wings-waved is a display given when an intruder is close to the nest, at least when there are young in it. Baird (1964) records it from both adults when a red squirrel carried off the young and ate them. It has been elicited from the female by a man crawling on hands and knees near the nest (D. A. West, pers. comm.). I have seen it directed at an erect man approaching the nest, at a mirror, and at a shiny microphone and shiny camera tripod leg near the nest, in captivity.

A low-intensity performance (also seen once in the wild at a nest not yet completed) consists of tail spread, *Crest-raised* (a display seen in intraspecific agonistic contexts), Chink, sometimes lifting of the carpals out from the body, and the flicking of one wing, rendering the underwing coverts conspicuous (Fig. 1A). The highest intensity shows the feathers of the ventrum fluffed slightly, Crest-raised, tail spread fully and raised and depressed (Fig. 1B and C). The wings are opened fully and waved slowly above the back and down to the sides, both in synchrony and asynchrony (Fig. 1B and C). At the same time as the wings are open, the body is slowly pivoted in place from side to side. When the observer leaves the area of the nest Squawk given during Wings-waved is replaced by Chink and finally by silence. Wings-waved is given either at the nest or on branches close to it.

Figure 1 shows a series of stages in the reaction of a captive (tame) female to a tripod leg near the nest. (The leg can be seen at the arrow farthest right in A, B, and D, and at the white arrow at bottom center in C.) Other arrows point to features of the display mentioned above. The wings were also often held straight above the back together. In C note the sleeked crest just before flight with open bill (D) at the tripod which was bitten repeatedly.

Baird (1964) noted erection and lowering of the male's red breast feathers (see his Fig. 1D), and ruffling of the lower back plumage (see his Fig. 1, A and B) in both sexes.

Spread and movements of the tail and wings appear ritualized and are probably derived from flight intention movements, in this case to fly towards the stimulus since the intensity of these movements increases before attack (compare A with C in Fig. 1). Sleeking the crest also anticipates flight.

The wing movements and bright underwing coverts probably aid in distracting a predator's attention from the nest. The movement of red breast feathers in the male that Baird observed may also function in this way; he noted a change in hue with these movements.

Another richmondenine finch, *Cyanocompsa cyanooides*, is described as feigning a broken wing when disturbed at the nest by man (Worth, 1939).

ACKNOWLEDGMENTS

I would like to thank Dr. W. C. Dilger for his help in many ways, and for his critical reading of an earlier draft of the manuscript. Drs. R. B. Fischer, W. T. Keeton, and A. van Tienhoven made suggestions for improving the manuscript. Messrs. C. Kepler and S. Weeks helped me in the field, and J. Baird kindly allowed me to see a manuscript before publication. Mr. C. Elzena prepared Figure 1. Financial assistance was received from a National Institutes of Health (PHS/NIMH) fellowship, and Sigma Xi RESA Grants-in-aid.

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